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GERMAN EMPIRE

Issued on  
October 18, 1932

IMPERIAL PATENT OFFICE

PATENT SPECIFICATION

No. 561 757

Class 30 d Group 17

H 128753 IX/30 d

*Date of Publication of the Granting of Patent:*  
*September 29, 1932*

Georg Heuchemer in Stuttgart-Cannstadt

Bell-Shaped Vaginal Pessary

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561 757

Georg Heuchemer in Stuttgart-Cannstadt

Bell-Shaped Vaginal Pessary

Patented in the German Empire from September 30, 1931

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The present invention pertains to an especially expedient form and handling of inflatable vaginal pessaries, in which the pessaries can be emptied by a simple movement.

Inflatable vaginal pessaries with feed lines for air and medicinal liquids, which can be drained off when necessary, have been known.

The novelty is that the inflatable part is fastened, in a particularly advantageous manner, by means of perforated, air-guiding screws, and that emptying can be performed in an especially simple manner.

An exemplary embodiment is shown in the drawing.

According to Figure 1, a rubber tube *c* is fastened by means of a perforated screw *b* to a fixed bottom part *a* made of light metal or hard rubber in a turned groove of such a shape that a bell-shaped tube, which covers the head of the uterus and is at the same time sealingly pressed against the walls of the vaginal canal, is formed upon inflation, so that displacement is ruled out. The cover *d* screwed into the bottom part *a* contains the spring-tensioned plate *f* acting as a check valve and the air feed tube *c*. After introduction by means of the tube *c* and after the pessary has been inflated with compressed air, it may be worn for as long as needed, because the tube *c* can be screwed off.

However, to make it possible to pump a medicinal fluid between the uterus and the pessary, a tube *g* is screwed into the cover *d*, through which the liquid is pumped into the desired space in the known manner by means of a hole *g'* and the rubber valve *h* acting as a check valve.

The pessary is emptied by pushing in the pin *i*, which is fastened to the valve plate *f*, with the fingernail, as a result of which the plate *f* is raised and the compressed air can escape. The pessary can now be easily removed from the vagina. Liquid that may have been pumped in can flow off by itself.

According to another embodiment, the cover *d* for accommodating the drain tube *k* is provided, according to Figure 2, with another threaded hole and a hole *k'*, so that the liquid pumped in through the tube *g* and the valve *h* can flow off, and irrigation of the uterus is possible without the irrigating liquid coming into contact with the vaginal walls.

#### Patent Claims:

1. Bell-shaped vaginal pessary, in which an inflatable soft rubber ring is fastened to a rigid bottom part, which can be introduced by means of an inserting tube, characterized in that the soft rubber ring (*c*) is inserted and screwed into a recess of the bottom part (*a*) by means of a perforated screw (*b*).

2. Vaginal pessary in accordance with claim 1, characterized in that a spring-tensioned plate valve, whose plate (*f*) can be ventilated by a pin (*i*) that can be lifted by pressing with the finger, is arranged in the bottom part (*a*) to let out the air.

3. Vaginal pessary in accordance with claims 1 and 2, characterized in that the bottom part (*a*, *d*) has a hole (*g'*), which is closed by a plate valve (*h*) and through which medicinal liquids can be pumped in by means of a feed tube (*g*).

4. Vaginal pessary in accordance with claim 3, characterized in that the bottom cover (*d*) also has a hole (*k'*), through which the irrigating liquid can flow off via a drain tube (*k*).

Attached: 1 sheet of drawings

To Patent No. 561 757  
Cl. 30 d Group 17

Figure 1

KEY:

(a) Drug

(b) Compressed air

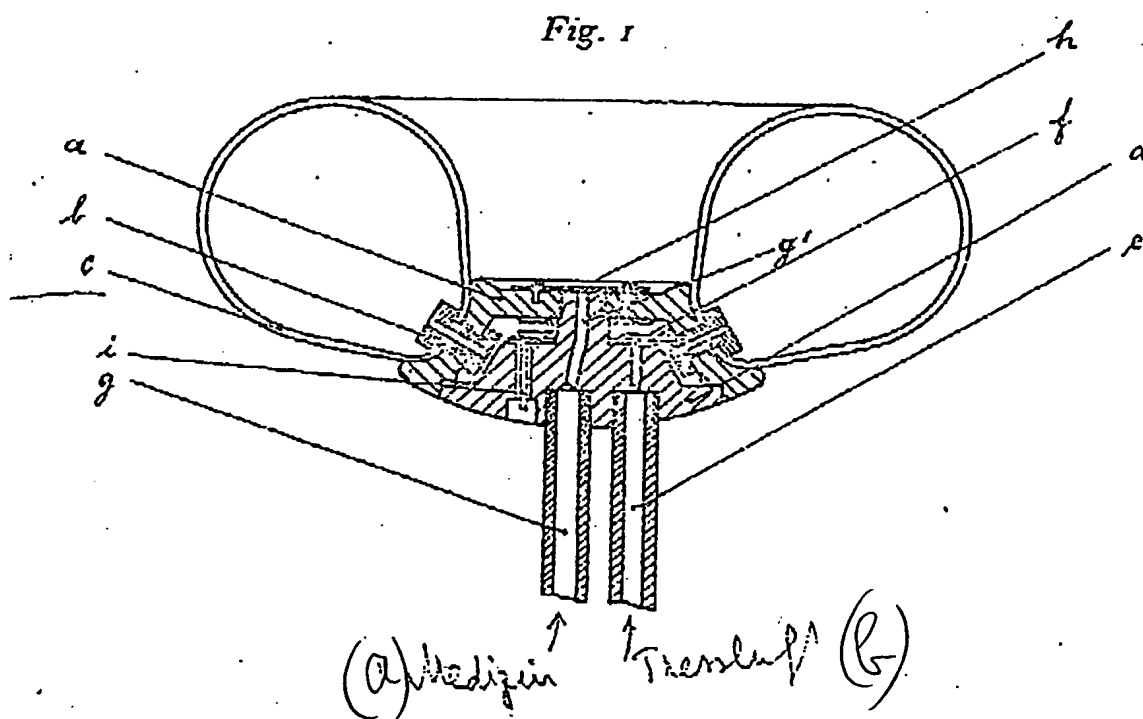
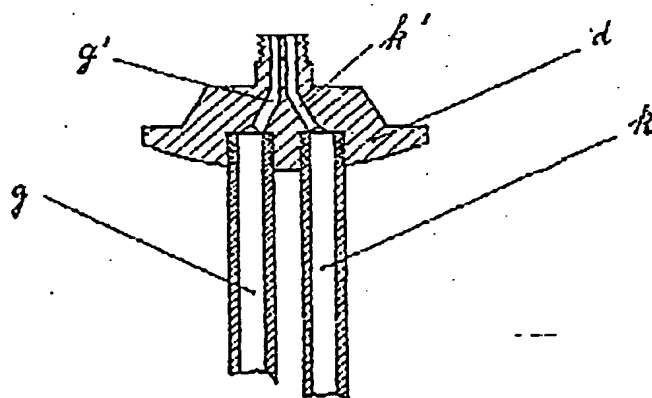


Figure 2

Fig. 2



PATENT COOPERATION TREATY

INTERNATIONAL PUBLICATION No. WO91/16030  
INTERNATIONAL APPLICATION No. PCT/US91/02329

NOTICE  
INFORMING THE APPLICANT OF  
THE COMMUNICATION OF THE  
INTERNATIONAL APPLICATION  
TO THE DESIGNATED OFFICES  
issued under PCT RULE 47.1(c),  
first sentence

To:

DOLEZALOVA, Hana  
Phillips, Moore, Lempio & Finley  
177 Post Street  
Suite 800  
San Francisco, CA 94108-4731  
ÉTATS-UNIS D'AMÉRIQUE

DATE OF MAILING OF THIS NOTICE  
31 October 1991 (31.10.91)

APPLICANT'S OR AGENT'S  
FILE REFERENCE  
2877.1AHHD

From:

The International Bureau of WIPO  
1211 Geneva 20  
Switzerland

Notice is hereby given that the International Bureau has communicated, as provided  
in PCT Article 20, the international application referred to above to the following  
designated Offices on the date indicated above as the date of mailing of this  
Notice:

to the national Offices of AU, CA, HU, JP, KR, SU, and to EP

The applicant is reminded that he must enter the "national phase" before each  
designated Office by performing, within the time limit applicable under PCT Article  
22 or 39(1), the acts referred to therein.

In accordance with PCT Rule 47.1(c), third sentence, each designated Office has  
been informed, separately from the communication of the international application,  
of the sending and the date of mailing of the present notice.

RECEIVED OF:  
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Form PCT/IB/308 (January 1988)

J. Zahra  
(Authorized Officer)



sized. As such, no new matter is being added. The Examiner's approval is therefore requested.

Respectfully submitted,

DANN DORFMAN HERRELL AND SKILLMAN  
A Professional Corporation  
Attorneys for Applicant(s)



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DONALD R. PIPER, JR.  
PTO Registration No. 29,337

Telephone: 215/545-1700  
Facsimile: 215/545-2750

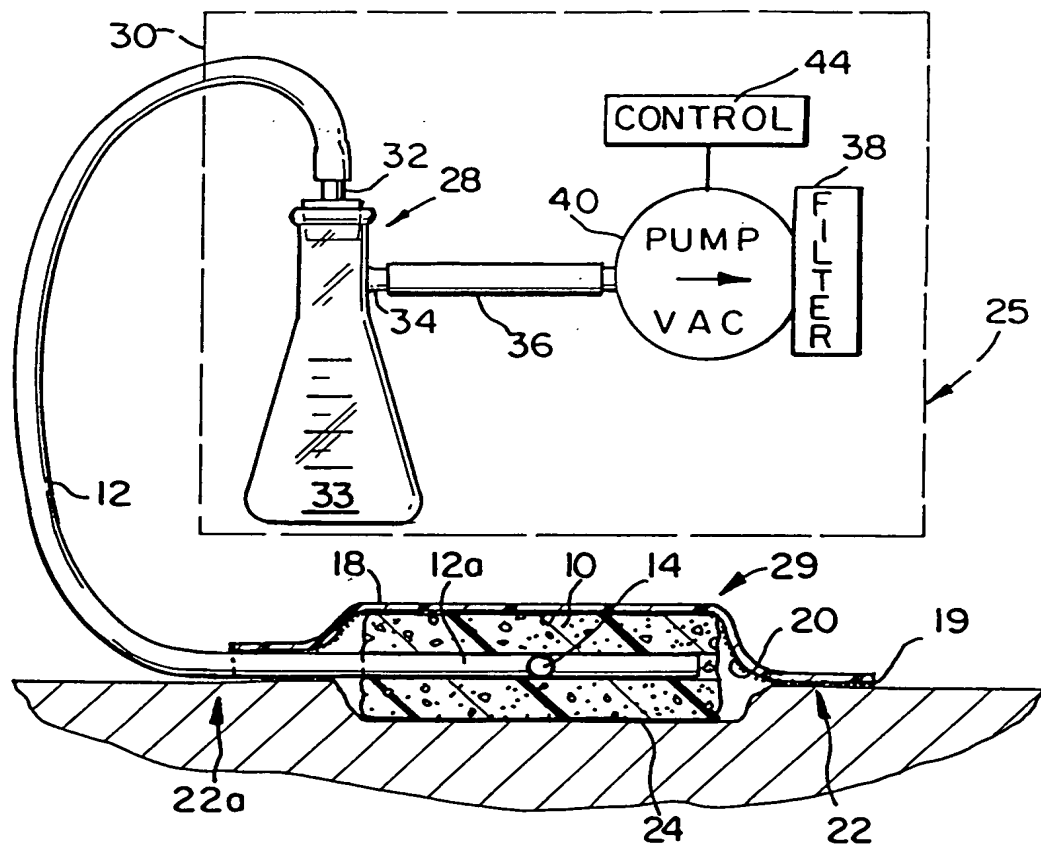


FIG. 1

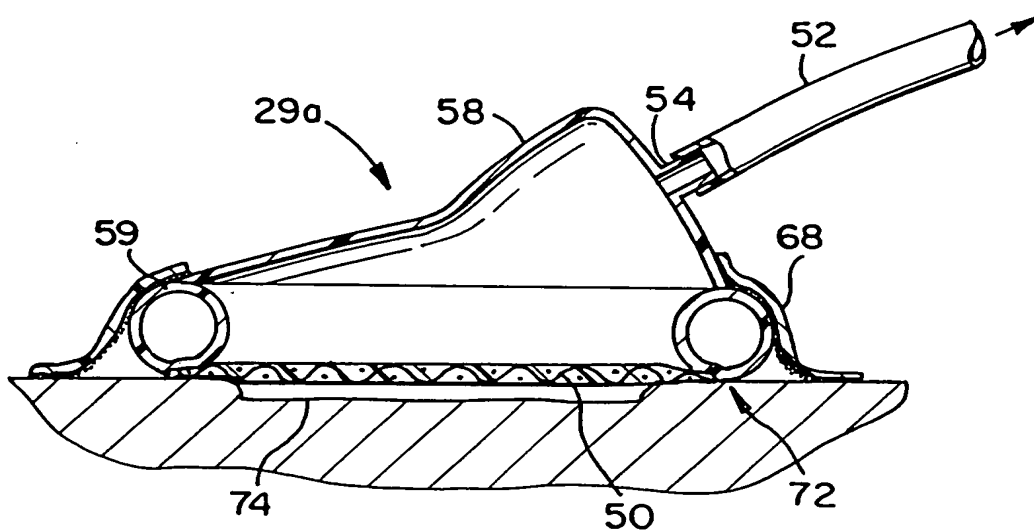


FIG. 2



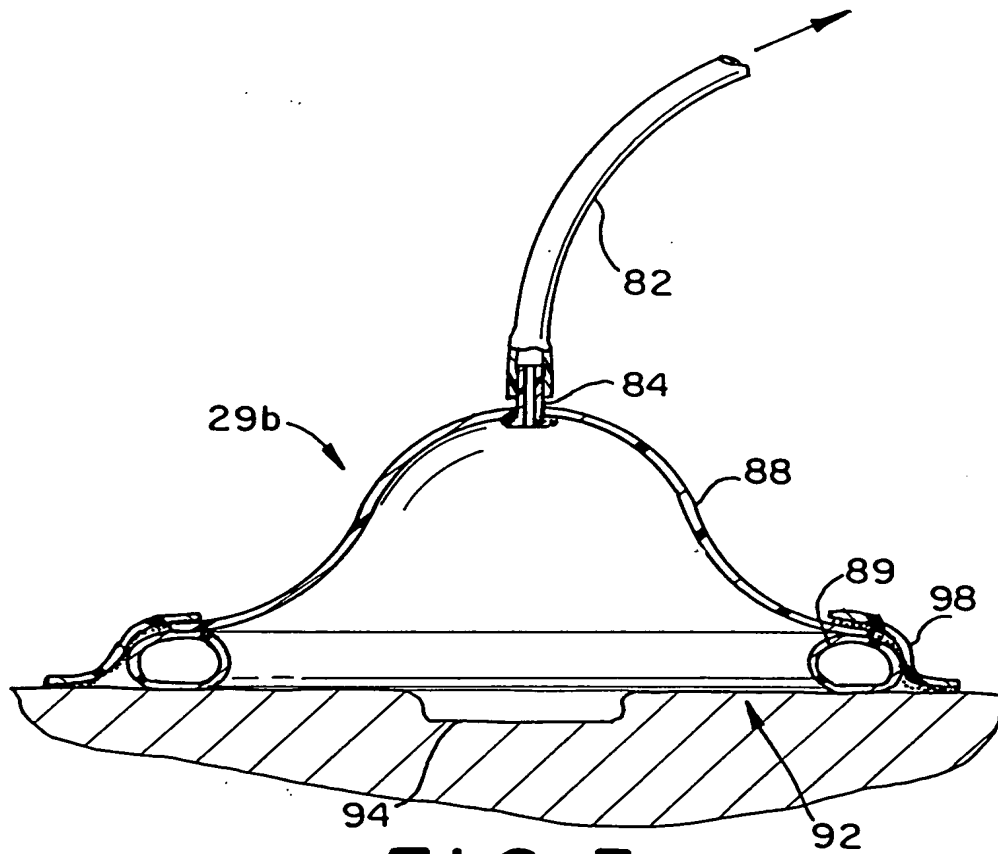


FIG. 3

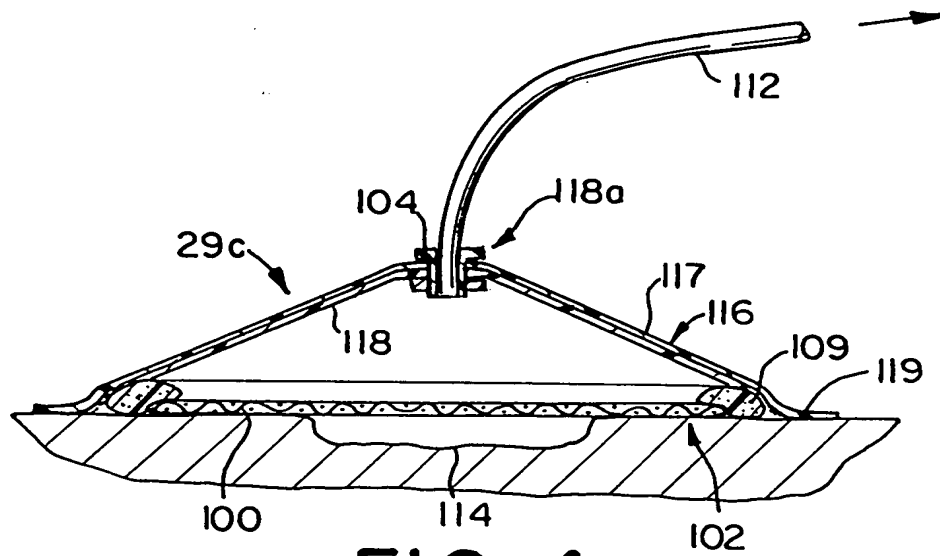


FIG. 4

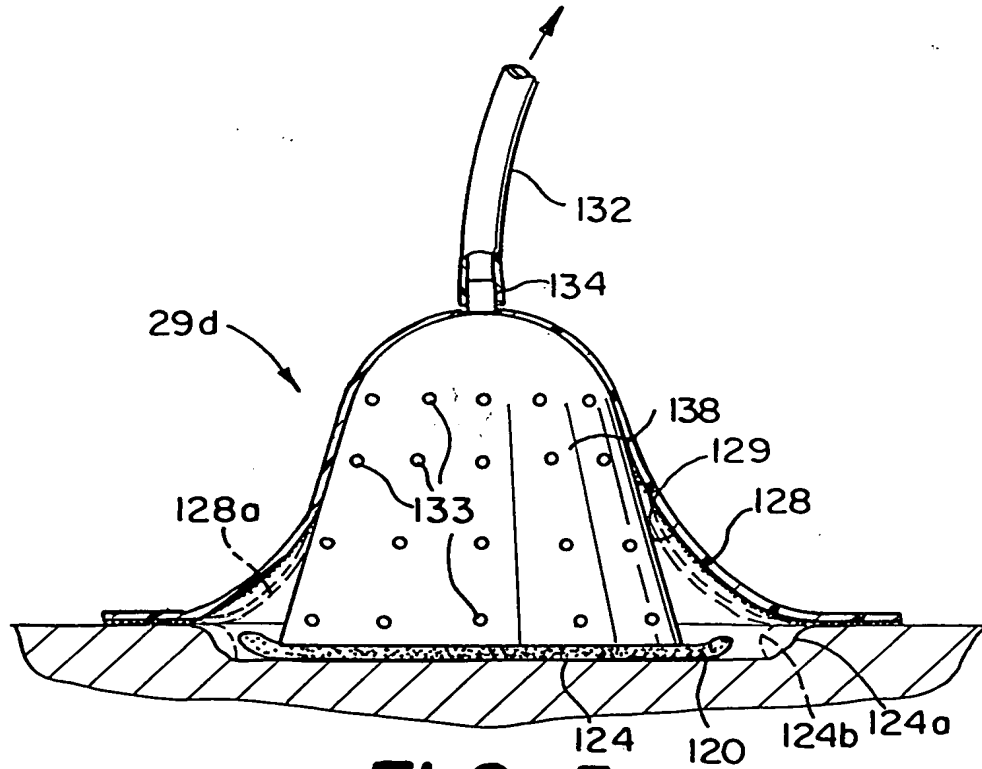


FIG. 5

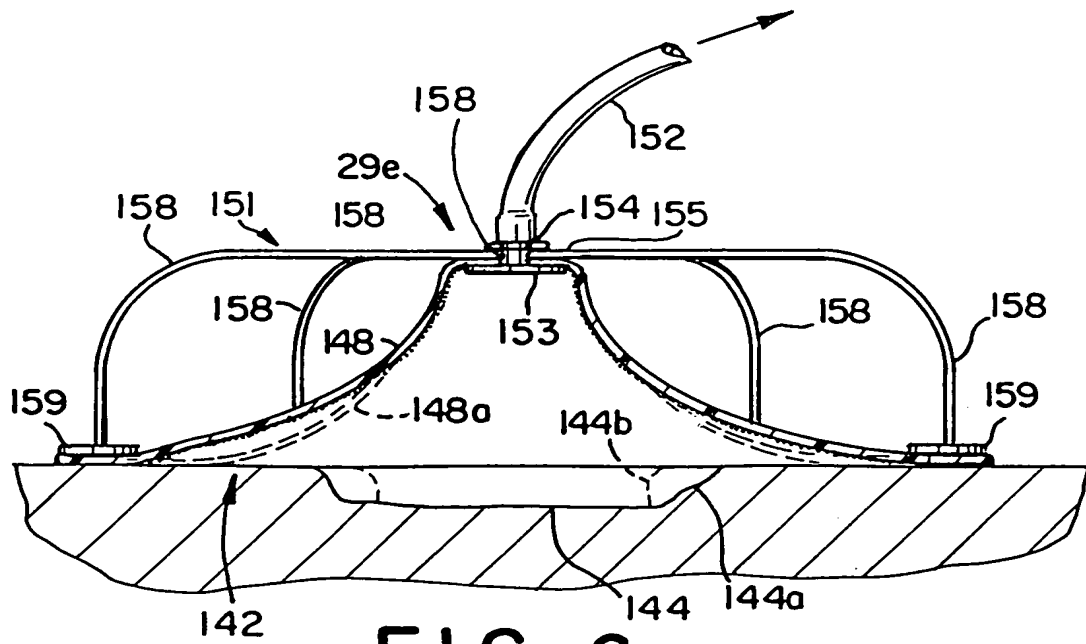


FIG. 6

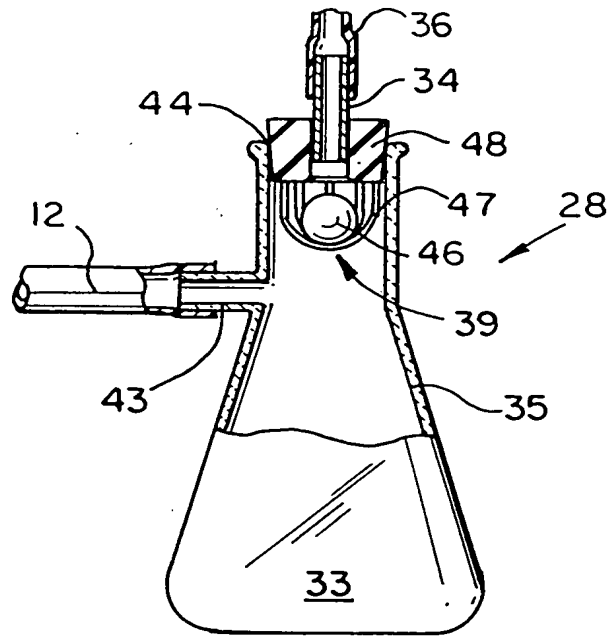


FIG. 7

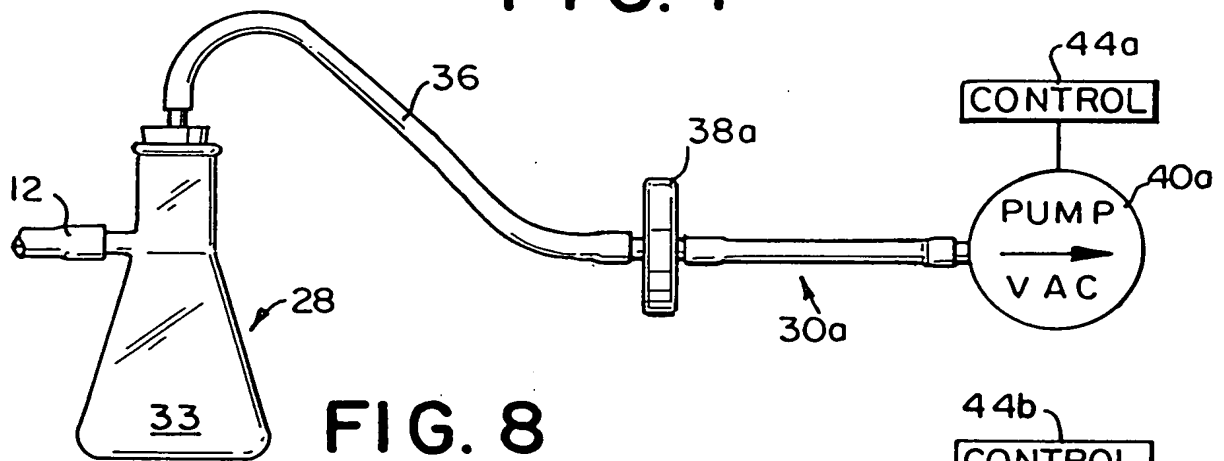


FIG. 8

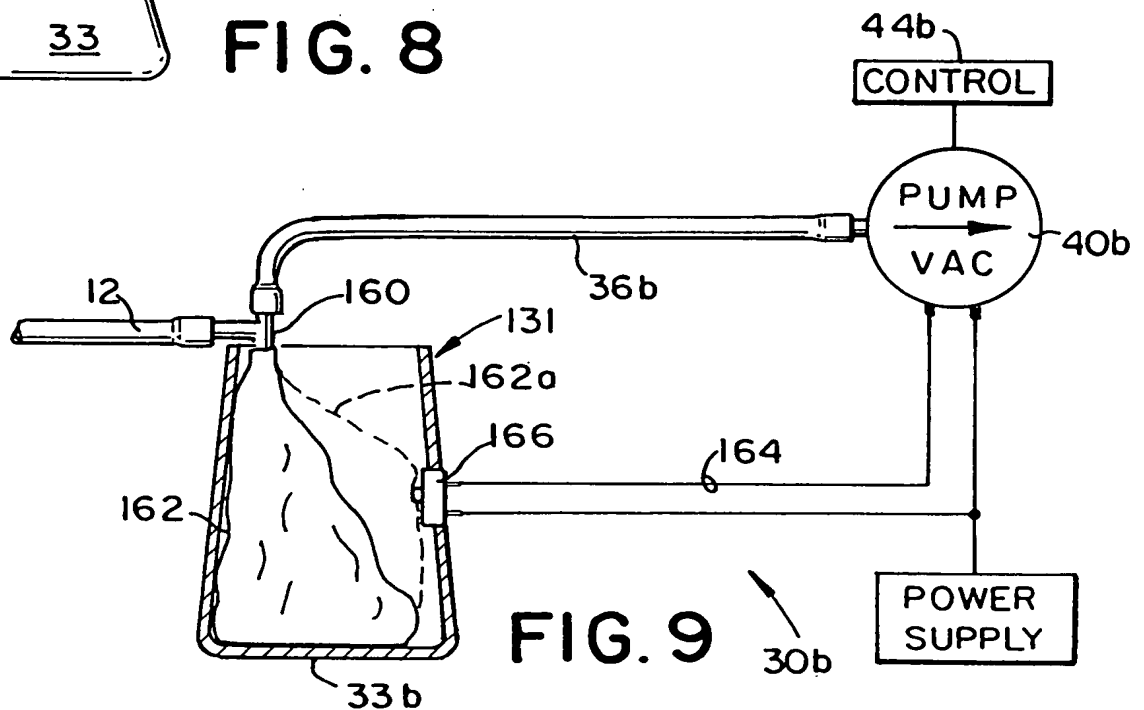


FIG. 9

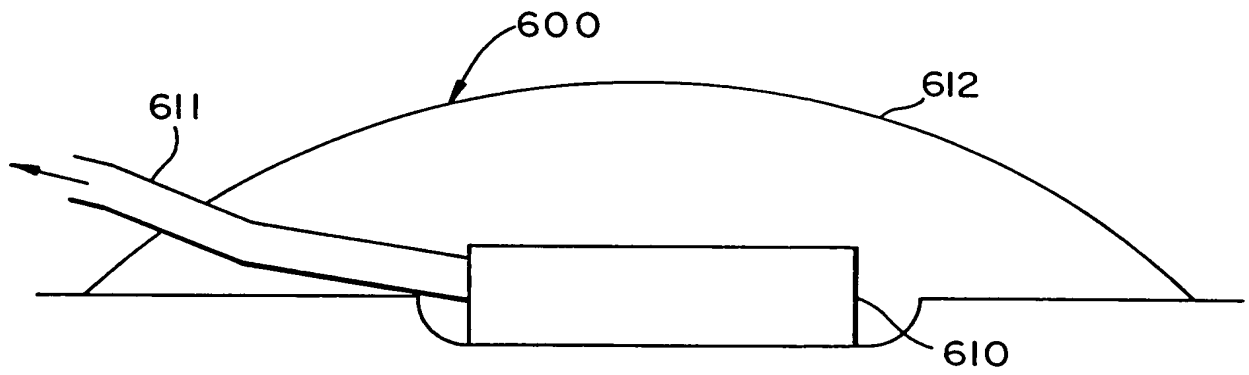


FIG. 10

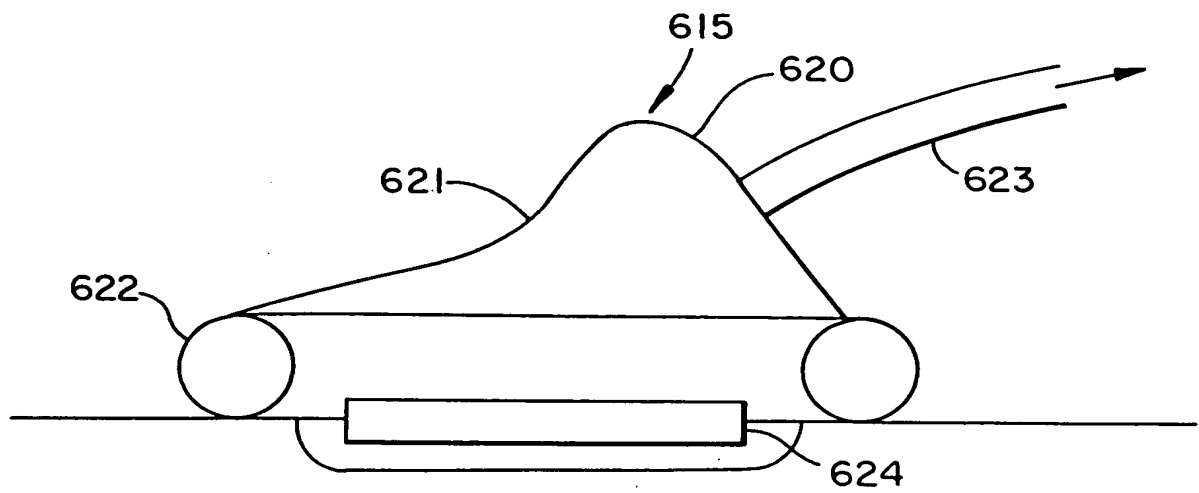


FIG. 11



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re the Application of

LOUIS C. ARGENTA and MICHAEL J.  
MORYKWA

Serial No. 08/028,677

Filed: March 9, 1993

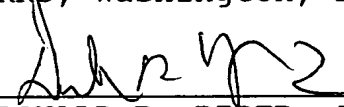
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Attorney for Applicant(s)  
PTO Reg. No. 29,337

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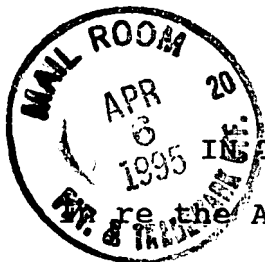
Notification Regarding Revocation of Small Entity Status

The small entity status for this application is hereby revoked. The rights in the patent application have been assigned to a company that is not a small entity. Accordingly, Applicants are no longer entitled to small entity status.

DANN, DORFMAN, HERRELL AND SKILLMAN  
A Professional Corporation

By   
DONALD R. PIPER, JR.  
PTO Registration No. 29,337

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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NOTIFICATION OF FEE ADDRESS

Please enter "Payor Number" No. 000110 in the Office records to identify the "Fee Address" to be used in connection with this case for all future maintenance fee payments and related correspondence.

Respectfully submitted,

DANN DORFMAN HERRELL AND SKILLMAN  
A Professional Corporation  
Attorneys for Applicant(s)

  
\_\_\_\_\_  
DONALD R. PIPER, JR.  
PTO Registration No. 29,337

Telephone: 215/563-4100  
Facsimile: 215/563-4044



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

LOUIS C. ARGENTA and MICHAEL J.  
MORYKWA

Serial No. 08/028,677

Filed: March 9, 1993

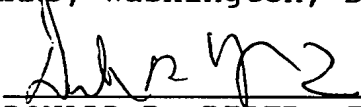
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Attorney for Applicant(s)  
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A Professional Corporation

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CO-INVENTOR'S NAME

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SERIES CODE/SERIAL NO.

FILING DATE

TOTAL CLAIMS

EXAMINER AND GROUP ART UNIT

DATE MAILED

08/028,677

03/09/93

040

LACYK, J

3305

01/05/95

First Named  
Applicant

ARGENTA,

LOUIS C.

TITLE OF  
INVENTION

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ATTY'S DOCKET NO.

CLASS-SUBCLASS

BATCH NO.

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Wake Forest University

(2) ADDRESS: (CITY &amp; STATE OR COUNTRY)

Winston-Salem, North Carolina U.S.A.

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(Date)

Donald R. Piper, Jr. Reg. #29,337 04/04/95

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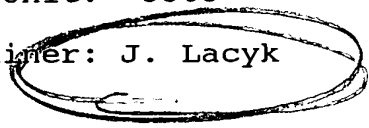
SP 3305



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re: The Patent Application of  
LOUIS C. ARGENTA & MICHAEL J. MORYKWA  
Serial No. 08/028,677  
Filed: March 9, 1993  
For: WOUND TREATMENT EMPLOYING  
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: Art Unit: 3305  
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: Examiner: J. Lacyk  
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April 3, 1995  
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Donald R. Piper, Jr.  
Attorney for Applicant(s)

5/18

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CERTIFICATE FOR INFORMATION

DISCLOSURE STATEMENT (37 CFR 1.97(e))

I, Donald R. Piper, Jr., attorney for applicants, hereby certify that no item of information contained in this Supplemental Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, was known to any individual designated in §1.56(c) more than three months prior to the filing of this

Supplemental Information Disclosure Statement. 37 CFR  
\$1.97(e)



**INFORMATION DISCLOSURE STATEMENT FILED AFTER  
THE ISSUANCE OF A NOTICE OF ALLOWANCE UNDER  
37 CFR \$1.311**

---

This Supplemental Information Disclosure Statement is being filed after issuance of a Notice of Allowance under 37 CFR \$1.311. In accordance with the requirements of 37 CFR \$1.97(d):

- (a) A certification is provided as specified in 37 CFR \$1.97(e).
- (b) Applicant hereby petitions for the consideration of this Supplemental Information Disclosure Statement. 37 CFR \$1.97(d)(ii).
- (c) Applicant submits the petition fee set forth in \$1.17(i)(1). (\$130.00).

Supplemental Information Disclosure Statement

All of the references disclosed in this Supplemental Information Disclosure Statement were first disclosed to the undersigned attorney in a letter sent from a licensee of the patent application on March 27, 1995. The set of references was received by the undersigned attorney from the licensee on Friday, March 31, 1995.

Respectfully submitted,

DANN, DORFMAN, HERRELL AND SKILLMAN  
A Professional Corporation  
Attorney for Applicant(s)

By: 

Donald R. Piper, Jr.  
PTO Registration No. 29,337

Telephone: 215/563-4100  
Facsimile: 215/563-40441

FORM PTO-1449

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.

SERIAL NO. 08/028,677

INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

99

APR 7 1995

PATENT &amp; TRADEMARK OFF.

APPLICANT

LOUIS C. ARGENTA and MICHAEL J. MORYKWA

FILING DATE

March 9, 1993

GROUP

3305 (Exmr. J. Lacyk)

(Use several sheets if necessary)

## U.S. PATENT DOCUMENTS

Examiner Initial		DOCUMENT NUMBER							DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
SK	A1		7	6	5	7	4	6	7/04	Miner	—	—	
	A2		8	4	3	6	7	4	2/07	Funk	—	—	
	A3	1	3	5	5	6	7	9	10/20	McConnell	—	—	
	A4	1	3	5	5	8	4	6	10/20	Rannells	—	—	
	A5	1	3	8	5	3	4	6	7/21	Taylor	—	—	
	A6	2	2	3	2	2	5	4	2/41	Morgan	—	—	
	A7	2	3	3	8	3	3	9	1/44	LaMere	—	—	
	A8	2	9	6	9	0	5	7	1/61	Simmons	—	—	
	A9	3	0	2	6	5	2	6	3/62	Montrose	—	—	
	A10	3	4	8	6	5	0	4	12/69	Austin, Jr.	—	—	
SK	A11	3	4	7	8	7	3	6	11/69	Roberts et al.	—	—	

## FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER							DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES NO	
SK	B1	6	4	1	0	6	1		8/50	United Kingdom	—	—		
	B2	1	2	7	3	3	4	2	5/72	United Kingdom	—	—		
	B3	2	8	0	9	8	2	8	9/78	Germany	—	—		
SK	B4	WO	91	1	6	0	3	0	10/91	Published PCT	—	—		

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

SK	C1	Junod, "Hyperemia by Suction Apparatus, Chapter VIII
	C2	Saunders, J.W., The Lancet, pp. 1286-1287, June 28, 1952, "Negative-Pressure Device for Controlled Hypotension During Surgical Operations"
	✓ C3	Landis et al., Robinette Foundation of the Hospital of the University of Pennsylvania, "The Effects of Alternate Suction and Pressure on Blood Flow to the Lower Extremities"
	✓ C4	Hargens et al., Space Physiology Laboratory, Life Science Division, NASA Ames Research Center, "Control of Circulatory Functions in Altered Gravitational Fields"
	✓ C5	Wolthuis et al., Physiological Reviews, 54: 566-595, July 1974, "Physiological Effects of Locally Applied Reduced Pressure in Man"
	✓ C6	Viljanto et al., Br. J. Surg., 63: 427-430, 1976, "Local hyperalimentation of open wounds"
SK	✓ C7	Dillon, Angiology -- The Journal of Vascular Diseases, pp. 47-55, January 1986, "Treatment of Resistant Venous Stasis Ulcers and Dermatitis with the End-Diastolic Pneumatic Compression Boot"

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.

SERIAL NO.

08/028,677

INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

APPLICANT

LOUIS C. ARGENTA and MICHAEL J. MORYKWA

FILING DATE

March 9, 1993

GROUP

3305 (Exmr. J. Lacyk)

## U.S. PATENT DOCUMENTS

Examiner Initial	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
2A	A12 3 4 8 1 3 2 6	12/69	Schamblin			
1	A13 3 6 1 0 2 3 8	10/71	Rich, Jr.			
	A14 3 8 2 6 2 5 4	7/74	Mellor			
	A15 4 1 4 9 5 4 1	4/79	Gammons et al.			
	A16 4 1 7 2 4 5 5	10/79	Beaussant			
	A17 4 2 9 7 9 9 5	11/81	Golub			
	A18 4 4 6 9 0 9 2	9/84	Marshall et al.			
	A19 4 6 2 4 6 5 6	11/86	Clark et al.			
	A20 4 7 5 9 3 5 4	7/88	Quarfoot			
	A21 4 7 6 5 3 1 6	8/88	Marshall			
	A22 4 7 7 8 4 5 6	10/88	Lokken			

## FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES NO

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

✓ C8	Lundvall et al., Acta Physiol Scand, <u>136</u> : 403-409, accepted Jan. 28, 1989, "Transmission of externally applied negative pressure to the underlying tissue. A study on the upper arm of man"
✓ C9	Klemp et al., The Journal of Investigative Dermatology, pp. 725-726 (1989), "Subcutaneous Blood Flow in Early Male Pattern Baldness"
✓ C' 10	A. Harle, Z. Orthop., <u>127</u> : 513-517 (1989), "Schwachstellen herkommlicher Drainagen"
✓ C 11	Dunlop et al., Br. J. Surg., <u>77</u> : 562-563 (1990), "Vacuum drainage of groin wounds after vascular surgery: a controlled trial"
✓ C 12	Maddin et al., International Journal of Dermatology, <u>29</u> : 446-450 (1990), "The Biological Effects of a Pulsed Electrostatic Field with Specific Reference to Hair: Electrotrichogenesis"
✓ C 13	Nakayama et al., Ann. Plast. Surg., <u>26</u> : 499-502 (1991), "A New Dressing Method for Free Skin Grafting in Hands"
✓ C 14	Hargens et al., Aviation, Space and Environmental Medicine, pp. 934-937, Oct. 1991, "Lower Body Negative Pressure to Provide Load Bearing in Space"

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INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

APPLICANT

LOUIS C. ARGENTA and MICHAEL J. MORYKWA

FILING DATE

March 9, 1993

GROUP

3305 (Exmr. J. Lacyk)

(Use several sheets if necessary)

## U.S. PATENT DOCUMENTS

Examiner Initial	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	A23 4 8 3 6 1 9 2	6/89	Abbate			
	A24 4 9 0 6 2 3 3	3/90	Moriuchi et al.			
	A25 4 9 1 7 1 1 2	4/90	Kalt			
	A26 4 9 4 1 8 8 2	7/90	Ward et al.			
	A27 4 9 5 3 5 6 5	9/90	Tachibana et al.			
	A28 5 0 8 6 7 6 4	2/92	Gilman			
	A29 5 1 0 6 3 6 2	4/92	Gilman			
	A30 5 2 2 8 4 3 1	7/93	Giarretto			

## FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION YES NO

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

C 15	Author unknown, Science, Sept. 1992, p. 42, "The Not-So-Bald-Truth"
C 16	Techno Takatsuki Co., Ltd., 8-16 Hatchonishimachi, Takatsuki City, Osaka, JAPAN, "HiBlow Air Pump"
C 17	Wells Johnson Company, 2045 N. Forbes Blvd., Suite 106, Tucson, AZ, "Suction Tips"
C 18	Industrial Equipment News, P.O. Box 1158, Skokie, IL 60076-9786, "Miscellaneous Equipment"

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